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Fair pricing of flexibility: Evidence from hourly exercisable electricity swing options

Abstract

In practice, flexibility in form of swing rights can be found in case of power plants and hydro storages on the generation side as well as in full supply or open contracts on the sales side. For this reason, the valuation and optimal exercise of such swing rights is an important task and a thorough understanding of swing options an essential basis.

In this talk three different two factor models (regime-switching AR-process, jump-diffusion process with Bernoulli jump-terms and a normal inverse Gaussian process) are introduced, compared and contrasted. Moreover, an efficient Least Squares Monte Carlo algorithm (LSM) is introduced and applied to swing options. Finally, the three models are compared with a focus on their ability to reproduce the characteristics of the EEX spot prices and the swing option values resulting for different numbers of exercise rights.